what is claimed is:

1. A method for controlling an electroplating process, the method comprising:

(a) obtaining a sample of electrolyte from the electroplating process;

(b) analyzing the sample of electrolyte by mass spectrometry to obtain a mass spectral result;

(c) comparing the mass spectral result to a plurality of known mass spectral results; and

(d) adjusting conditions of the electroplating process in response to the comparison.

2. The method of claim 1, wherein the sample of electrolyte is obtained directly from a plating cell of the electroplating process.

3. The method of claim 1, wherein the sample of electrolyte is obtained directly from a separate sampling vessel of the electroplating process.

4. The method of claim 1, wherein the sample of electrolyte is obtained from a central chemistry vessel of the electroplating process.

5. The method of claim 1, wherein the sample of electrolyte is analyzed using atmospheric pressure ionization mass spectrometry.

6. The method of claim 1, wherein the sample of electrolyte is analyzed using at least one mass spectrometry technique selected from the group consisting of API-MS, Quadrupole MS, Ion Trap MS, Magnetic Sector MS, and Time-of-Flight MS.

7. The method of claim 1, wherein the plurality of known mass spectral results is stored in a memory device.

8. The method of claim 7, further comprising determining whether the mass spectral result falls within a specified tolerance of a target result that is one of the plurality of known mass spectral results.

9. The method of claim 1, wherein the plurality of known spectral results are provided for a plurality of compositions comprising at least one of organic plating additives and breakdown products of said additives.

10. The method of claim 1, wherein adjusting conditions of the electroplating process comprises adjusting electroplating apparatus hardware.

11. The method of claim 10, wherein adjusting electroplating apparatus hardware comprises adjusting an electrolyte composition.

12. The method of claim 10, wherein adjusting electroplating apparatus hardware comprises adjusting an electrical current flow.

13. The method of claim 10, wherein adjusting electroplating apparatus hardware comprises adjusting a field shaping apparatus.

14. The method of claim 10, wherein adjusting electroplating apparatus hardware comprises adjusting a voltage level.

15. The method of claim 10, wherein adjusting electroplating apparatus hardware comprises adjusting a wafer handling apparatus.

16. The method of claim 10, wherein adjusting electroplating apparatus hardware comprises adjusting a relative orientation of an electrode with a counter electrode.

17. The method of claim 1, wherein, the mass spectral result is obtained for each cassette of wafers processed.

18. The method of claim 1, wherein, the mass spectral result is obtained for each wafer processed.

19. The method of claim 1, wherein, the mass spectral result is obtained multiple times for each wafer processed.

20. An apparatus for controlling an electroplating process, the apparatus comprising:

(a) a mass spectrometer equipped with an electrolyte sampling device and an ionization source configured to deliver a sample of ionized electrolyte to the mass spectrometer; and

(b) an associated logic for controlling the electroplating process based on a result obtained from the mass spectrometer upon analysis of the sample of ionized electrolyte.

21. The apparatus of claim 20, wherein the electrolyte sampling device collects electrolyte directly from a plating bath of the electroplating process.

22. The apparatus of claim 20, wherein the electrolyte sampling device collects electrolyte from a separate sampling vessel that receives electrolyte from a plating bath of the electroplating process.

23. The apparatus of claim 20, wherein the electrolyte sampling device collects electrolyte from a separate sampling vessel that receives electrolyte from a plating bath of the electroplating process.

24. The method of claim 20, wherein the electrolyte sampling device collects electrolyte from a central chemistry vessel of the electroplating process.

25. The apparatus of claim 20, wherein the associated logic compares the result to a plurality of known mass spectral results in order to determine commands for controlling the electroplating process.

26. The apparatus of claim 25, wherein the plurality of known mass spectral results is stored in a memory device.

27. A method for controlling a wafer wet process in integrated circuit fabrication, the method comprising:

(a) obtaining a sample of processing solution from the wafer wet process;

(b) analyzing the sample of processing solution by mass spectrometry to obtain a result;

(c) comparing the result to a plurality of known mass spectral results; and

(d) adjusting conditions of the wafer wet process in response to the comparison.

28. The method of claim 27, wherein the sample of processing solution is analyzed using atmospheric pressure ionization mass spectrometry.

29. The method of claim 27, wherein the plurality of known mass spectral results is stored in a memory device.

30. The method of claim 29, further comprising determining whether the result falls within a specified tolerance of a target result that is one of the plurality of known mass spectral results.

31. An apparatus for controlling a wafer wet process in integrated circuit fabrication, the apparatus comprising:

(a) a mass spectrometer equipped with a sampling device and an ionization source configured to deliver a sample of ionized processing solution from the wet process to the mass spectrometer; and

(b) an associated logic for controlling the wafer wet process based on a result obtained from the mass spectrometer upon analysis of the sample of ionized processing solution.

32. The apparatus of claim 31, wherein the associated logic compares the result to a plurality of known mass spectral results in order to determine commands for controlling the wafer wet process.

33. The apparatus of claim 32, wherein the plurality of known mass spectral results is stored in a memory device.

34. A computer program product comprising a machine readable medium on which is provided instructions for controlling an electroplating process, the instructions comprising program code for adjusting conditions of the electroplating process in response to a mass spectral analysis of an electrolyte sample from said electroplating process.

35. The computer program product of claim 34, wherein the mass spectral analysis includes a comparison of mass spectral data for said electrolyte sample to a plurality of known mass spectral data.